The Soybean Digest

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THE *Soybean Digest*

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WE REPEAT —

WE are informed that the Soybean Processors Advisory Committee met recently in Washington to consider problems confronting the soybean industry.

Among the projects to be taken under advisement by sub-committees press dispatches list the following:

> (1) Calculate the surplus or deficiency of processing capacity next year in the Midwest soybean area, assuming average yield on the 1943 crop acreage goal, and will make recommendations with regard to expansion of present facilities. (2) Make a further study of the use of tank cars for the purpose of increasing efficiency and operating the industry with the fewest number of cars. (3) Study the types of soybean oil now used for industrial purposes and report on the extent to which soybean oil can be replaced by other oils, especially linseed oil, in these uses in order to make more soybean oil available for edible use. (4) Study cross hauling of soybean meal, especially in connection with the other meals. (5) Make recommendations for the distribution of soybean oilmeal owned by Commodity Credit Corporation. (6) A sub-committee was appointed to explore all means that might be taken by processors to obtain beans, and to recommend to CCC what it should do to get the 1942 beans crushed and *at the same time provide sufficient seed for the 1943 crop.*

Now, problems concerning marketing inevitably affect handlers and growers as well as processors. Yet we are not informed that either group were represented at the recent meetings nor that they are to be consulted.

As has been pointed out in this column before, the 1942 soybean marketing program was written from the top down, with resulting indescribable confusion. Having learned nothing from that experience, and notwithstanding the fact that growers are bitter and dissatisfied because they were not consulted, the powers that be are apparently trying shortsightedly to chart the 1943 course without the advice of by far the largest segment of the industry — the men who will have to produce the crop.

It goes without saying that, whatever might be the best course in normal times, some sort of integrated planning is necessary when our national existence is at stake. But it also should go without saying that such a plan can work only when all parties affected are given fair representation.

A conference such as that suggested among others by J. E. Johnson, of Champaign, Ill., vice president of the American Soybean Association, at which growers, the grain trade, processors, equipment dealers and transportation experts all would be represented and make a real attempt to iron out the wrinkles in the 1943 program, is very definitely in order.

We repeat our December proposal made to CCC for

> "representation from soybean growers on the planning councils of marketing programs for the crops they produce, as well as from processors and grain handlers."

THE PROPOSAL TO TOWNSEND

THE soybean pioneers of America — there are some of them still growing soybeans today — recognized the soybean as a crop with a future. It was one of that great family of legumes, and because of that had the inherent ability to take nitrogen from the air and make it available for plant growth. Yet the crop came to us from the Orient, and the bacteria which carry on the work of nitrogen fixation are of a different family than those which are harbored on the clovers and on alfalfa. None of the bacteria were present in the soils of America. They had to be introduced from the Orient. And, strangely, they appear to be less hardy in the soil flora than some of the other families of nitrogen-fixing bacteria.

Yet they are the factors which determine whether a soybean crop takes nitrogen from the soil for plant growth, or takes it from the air and in addition to supplying the needs of plant growth leaves a residue of this important element. Without proper inoculation soybeans remove as much plant food as other grain crops, yields are lower, and protein content is lowered.

In time of war the farmers of America must produce every possible pound of food. An expenditure of only a few cents per acre will insure an abundance of nitrogen, will increase yields, increase the quantity of oil produced, and increase not only the quality but the percentage of protein in the soybean crop.

Elsewhere in this issue is a copy of a letter written to M. C. Townsend, now Director of the Food Production Administration in the Department of Agriculture at Washington. We believe our proposal is a sound one. We believe it is the patriotic duty of soybean growers to inoculate. We believe the AAA will recognize the soundness of the proposal.

We anticipate action from Washington. It has not come, to date. If it does not come soon we shall have to repeat our suggestion.

America must feed her fighting men, her allies, and her working men and women. Proper soybean inoculation will increase production to the extent of at least 2 and possibly 4 million acres. Why hesitate? Let's act! Let's recommend proper inoculation at every opportunity. Let's see that the job is done.

—s b d—

TIME TO GET BUSY

WAKE up America!! Time is awasting! Food becomes more scarce each day. Rationing becomes necessary. What will tomorrow bring? Why not effective merchandising of America's greatest protein storehouse — soybean flour?

When meat and eggs and milk and cheese are rationed, and when the men and women of America need proteins in greater quantities than ever before because of the type of work they are doing, why not introduce them to this highly digestible and almost completely balanced protein?

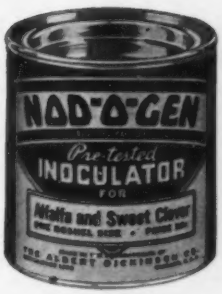
Is it wishful thinking to say that America's people should be eating soybean flour in their daily diets? Instead of feeding it all to livestock to get back a much smaller quantity of protein that is no better than the soybean meal which was fed?

Where are the retail merchandisers in the soybean industry? Why should the average housewife be told about the marvels of soybean flour, and then be unable to buy it in any of the stores she patronizes?

Wake up soybeaners!! Let's awaken America and supply her with our greatest war-time food crop!

JELLY TYPE CULTURES *DISCONTINUED*

Nod-O-Gen Now Furnished Only in Humus



To comply with war demands, the manufacture of Nod-O-Gen jelly type cultures made from agar has been discontinued. Agar, a product of Japan, is scarce and is needed continually by hospitals and laboratories.

We had sufficient stocks of agar for 1943 and beyond, and full government authorization to use it. However, since our humus type cultures perform equally well for growers, we considered it patriotic to discontinue jelly type cultures for the duration and turn our supply of Agar over to the Defense Supplies Corp. for a government stock pile. Those members of the trade who know of this action have heartily endorsed it.

Farm Laboratory Division

THE ALBERT DICKINSON CO.

CHICAGO **Est. 1854**

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The Pre-tested Inoculator

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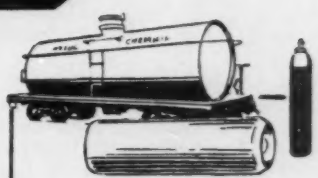

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ANSUL CHEMICAL COMPANY
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Now! In Actual Commercial Production!

Henry Reichhold, chairman of the board of directors, Reichhold Chemicals, Inc., (left) and Clinton Braidwood, the company's 28-year-old rubber expert, demonstrate Agripol, the new chemurgic rubber.

AGRIPOL • Soybean Rubber

THE first commercial production in the world of synthetic rubber from soybeans has been announced by Henry Reichhold, chairman of the board of Reichhold Chemicals, Inc., Detroit, one of the world's largest manufacturers of synthetic resins.

Called Agripol, this chemurgic rubber has been under experiment by Reichhold and the U. S. Government for more than a year. Present production capacity for the making of Agripol in Reichhold plants is approximately two million pounds per month, to be increased to 4,000,000 pounds per month by May, provided raw materials are allocated for the purpose and permission is granted by the War Production Board for a modest amount of additional equipment. Further expansion during 1943 will bring total annual production up to a minimum of 50,000,000 pounds.

Not for Tires

Agripol, at the present time, is not offered as a substitute for rubber in the manufacture of tires, Reichhold emphasizes. But its use for innumerable mechanical products of a critical nature has been demonstrated to a sufficient degree to absorb RCI's entire 1943 contemplated output, resulting in an immense conservation of industry's supply of natural rubber. The mechanical products for which Agripol will be used include: gaskets for food closures, industrial gaskets, belting, insulating mats, hose linings, adhesives, many latex products, proof goods. Direct military uses for Agripol include numerous gadgets, insulating parts, shock absorption pads, gaskets, etc., employed in the manufacture of:

Aircraft, naval vessels, cargo vessels, motorized military vessels, motorized weapons, chemical warfare supplies, ammunition cases, and many miscellaneous facilities.

Static Rubber

In certain of its physical properties, Reichhold frankly states, Agripol is inferior to natural rubber, particularly where high tensile strength and resistance to severe abrasion are desirable properties, as in automobile tires. But, the company points out, tires have never accounted for more than 50 per cent of the United States' rubber needs. In the field of static rubber Agripol is expected to prove a war and peacetime boon, such as in molded products where high tensile strength and great elongation are not essential. This is the field in which Agripol will release an equivalent amount of natural rubber.

Long tests have proven that in flexibility at low temperatures, Agripol is the comparative equivalent of natural rubber for all practical purposes. In aging tests it behaves in superior fashion to natural rubber, is less susceptible to attack by the elements and in resistance to oxidation greatly surpasses natural rubber.

A fortunate property of Agripol is its adaptability to existing equipment in rubber fabricating plants since it vulcanizes at about the same temperature range as natural rubber and can be worked on existing rolls and formed in existing molding equipment. Certain other substitutes for natural rubber very definitely require redesigned fabricating equipment and substantially higher temperatures for molding purposes.

Principal raw materials employed in the production of Agripol come from the American farm — soybean oil and ethyl alcohol, although only a small percentage of ethyl alcohol is used. The fatty acids extracted from the soybean oil, when polymerized with ethylene glycol (obtained through the dehydration of ethyl alcohol) produce Agripol.

In compounding the finished rubber, the customary fillers used in compounding natural rubber are employed, such as sulphur, carbon black, zinc oxide and an appropriate plasticizer.

Sufficient Oil

Chairman Reichhold said industry has been assured by the Government that there will be a sufficient supply of soybean oil available to assure the production of 200,000,000 pounds of chemurgic rubber annually, if such an amount is needed.

Agripol was made possible, Reichhold points out, through initial research begun by the Northern Regional Research Laboratories of the U. S. Department of Agriculture at Peoria which in the Spring of 1942 succeeded in demonstrating that a rubber like product (Norepol) could be made by the polymerization of the fatty acids extracted from domestic vegetable oils.

During the succeeding months, Reichhold chemists worked cooperatively with the Peoria staff and accomplished the task of reducing previous laboratory experiments to commercial practice and the synthetic substitute for natural rubber known as Agripol was the result.

Reichhold maintains plants at Detroit; Elizabeth, N. J.; Brooklyn, N. Y.; San Francisco; Tuscaloosa, Ala.; Sydney, Australia and Liverpool, England.

While it is true that Agripol is a new product and, therefore, its behavior over a long period of use cannot be prophesied with certainty, during this emergency one cannot await the outcome of extensive long-time tests which are characteristic of peacetime procedure.

This rubber problem will not be solved by those who are restrained by dogmatic concepts or preconceived prejudice or who are allergic to new ideas. This is time for bold invasion of new realms in order to bring out new tools and the new materials with which to win this war. In this spirit, Reichhold Chemicals, Inc., invites American industry and enterprise to join with others in advancing to a successful conclusion the fine job started at the Peoria, U.S.D.A., laboratories.

—s b d—

DANNEN MILL IS DAMAGED

Fire that started at 1 a. m. New Year's day apparently from spontaneous combustion in a screenings bin destroyed much of the top two floors of the Dannen Soybean Mill at St. Joseph, Mo., and resulted in $25,000 damage.

Only 6,000 bushels of beans were lost, by water damage, as the fire was kept out of the elevator. There was no meal on hand.

"We sort of patched the plant together and got it into operation in a surprisingly short time," says Dwight L. Dannen, "However, there remain several weeks of work to be done in order to have the place in first class condition again."

Why Dock High

Oil Content Beans?

By RUSSELL S. DAVIS

Clayton, Ill.

THE killing frost in September of 1942 caught our full season varieties of soybeans not quite fully matured. This was especially true with the variety M.13177. A few of the top pods were definitely frozen; the beans in these pods were swiveled and green. A little farther down the stem were a few pods with beans that were full size and smooth but green in color both inside and out. Then came the bulk of the pods bearing well matured beans, deep yellow in color both inside and out. Near the bottom of the stems the beans had been ripe longer and had weathered until they were slightly lighter yellow in color. This variety of beans went into commercial channels with a *five percent dock for green beans.*

We ran a quantity of these beans through a hand picker, dividing them into four lots according to maturity, sent them to a commercial chemist for an oil analysis, with the following results:

Composite sample (as it came from the field), 20.51% oil.

Swiveled beans, from top pods, 19.24% oil.

Plump but *green inside and out,* 21.07% oil.

Well matured, deep yellow throughout, 19.80% oil.

Well matured, slightly lighter yellow, 19.96% oil.

The *plump green beans contained quite a little more oil than the better matured yellow ones.* This fact is evident from two angles: there is considerable difference in the oil content of the green beans as compared to the better matured yellow lots; and the composite sample, containing both the swiveled and plump green beans, shows a higher oil content than the average of the two fully matured yellow lots: 20.51% for the composite sample, and 19.7% for the fully matured yellow lots.

Why should this sample be docked five percent for green beans? Some say to leave the green beans in storage for a while and they will color up. What will that gain? They already show more oil than the yellow ones.

A MESSAGE TO USERS OF SWIFT'S SOYBEAN OIL MEAL

Many of our customers have wondered why there should be a shortage of Swift's Soybean Meal when last year the soybean crop was again doubled.

The Following Are the Facts in this Case:

1. The demand for soybean meal is the largest in history.

War has cut off usual imports of tankage, meat scraps, fish meals, and oil meals. Unprecedented feeding requirements resulting from increased livestock production and the farmers' improved ability to buy high protein feeds have further intensified demand.

2. The supply of soybean meal is limited by the capacity of existing crushing plants.

Today, plants are operating full speed, 24 hours a day to produce meal. But the capacity of the industry to process beans is only slightly larger than it was a year ago—expansion of facilities takes time—while the demand for meal is far greater. Therefore, although there are far more beans than last year, the industry cannot immediately produce more meal.

What is being done to relieve this situation?

Soybean mills are expanding their crushing facilities. Cottonseed, flaxseed, and copra crushing mills in the South, East, and West, ordinarily idle during coming months, will crush soybeans. As a result, during the first quarter of 1943 the supply of soybean meal will be 50% greater than during the first quarter of 1942, according to present indications. In this program, Swift & Company is cooperating to the fullest!

And to Our Customers We Make this Wartime Pledge...

The Swift & Company Soybean Mills will distribute fairly among our customers the available supply of Swift's Soybean Meal.

GUARANTEED
Old Process
43% Protein

Swift & Company

MILLS AT
Champaign, Illinois Cairo, Illinois
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STEINLITE
One-minute
Moisture
Tester

ORDER YOUR STEINLITE NOW

If you expect to buy a Steinlite Moisture Tester any time within a year . . . be sure to order it now. Here's why! Many principal parts of the Steinlite are being used on war equipment and a high priority rating is required to purchase them. Moreover, heaviest demand for moisture testers normally comes in summer. So . . . if you wait until summer this year . . . you will be disappointed! Anticipate your needs for Steinlite. Order now!

"Headquarters" for Triers, Sieves, Scales . . . all Testing Equipment

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CHICAGO, ILLINOIS

Soybeans From the Farmer's Viewpoint

From an Address before the American Soybean Association Convention, Purdue University

By J. B. EDMONDSON
Clayton, Indiana

YOU may infer from my subject that I am appearing before you as a farmer, that I am a practical sort of fellow and that I possess a soybean viewpoint; all of which may be more or less true. It is generally understood nowadays that farming is a scientific enterprise and that the farmer must be a scientist.

While I admit the charge, I still have a sort of longing to get my feet on the solid ground again and talk about soybeans in the old, familiar way.

So just let me talk soybeans as they grow down on the farm. I am not worried about any mistatements I may make for you can pass them off by saying, "Well, he's a farmer anyway, and probably doesn't know any better." The joys and sorrows of growing soybeans are just about the same as always. A fine crop of soybeans is a source of extreme pride to any farmer but a poor crop is a cause of great disappointment, whether it be due to a lack of knowledge or foresight or to some unpredictable antic of nature.

Surprised

I am still surprised at some of the practices of farmers in growing their crop of soybeans. I know farmers who planted soybeans last spring that they knew wouldn't grow over 50%. The result was no stand; I know of farmers who planted beans in late June, using varieties that require the fullest possible season. The result is that the beans today are still green as they were in July; I know of farmers who sowed their beans on wet soil with no effort to kill the weeds first; the result is a pitiful sight today.

And here is another situation that seems hardly credible to me. A few years back, the soybean world was startled by a new "wonder" bean that was discovered over in Ohio and which was sold for a fabulous price per bean by the discoverer. Almost unbelievable claims were made for this new bean. Immediately the agronomy departments of Indiana, Ohio, Illinois and Iowa were on the alert and secured samples of this bean for testing. At first glance, these soybean men became suspicious and the subsequent behavior of the bean in the test plots bore out their suspicions; in short, it had all the earmarks of the old Midwest variety that the older soybean growers discarded years ago — so long ago, in fact, that most growers today have either forgotten about them, or never heard of them.

This new variety proved to have all the weakness of the old Midwest which had caused its early demise. It shattered badly, it was late in maturing, it lodged badly, and worst of all it was low in oil content. Immediately, the extension departments in all these states sent out warning against investing in this get-rich-quick gold mine.

"I have been preaching row planting for 31 long years." — J. B. Edmondson.

McClaves Now

Yet in various parts of Indiana last winter, I found evidences of this variety being grown and exploited. True, it had in most cases lost its original name of "McClave." I found the "Clay," the "Claybank," the "New London," the "Cluster Bean" and the "Premier." Yet, wherever I could find a sample of them, they all looked very much like the same old Midwest that I have fought worse than cockleburs to keep out of my Dunfields. This, in spite of the fact that processing plants spread the word far and wide that this new variety would not be bought by the mills except at a twenty cent discount on account of their low oil content.

You would think that at such odds, the McClave soybean wouldn't have a chance. Yet, not over six weeks ago, a good farmer came to me with the news of meeting a grower in central Indiana who, he said, had a wonderful new bean that he was selling at $8.00 per bushel and he wanted to know if I didn't think it a good investment for him to buy some seed. I told him!

J. B. EDMONDSON

The point I am making is that in spite of all the educational work that has been carried on about soybeans, farmers are yet doing a good deal of stumbling and blundering with their soybeans that is costing themselves and the country a sizeable tonnage of this much needed crop.

(Continued on page 14)

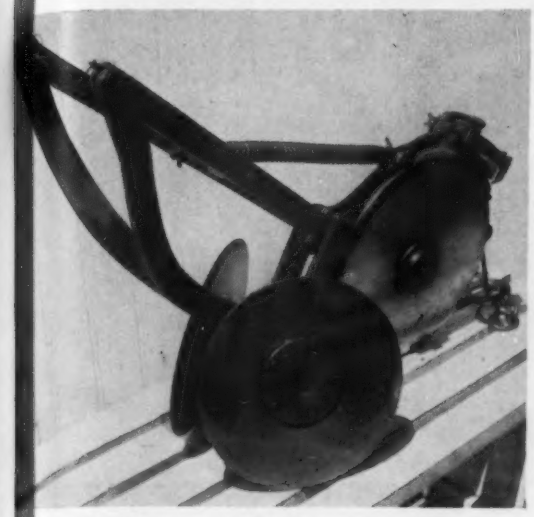
★ ★ ★ ★ ★ ★

SOY FLOUR IN HOT SCHOOL LUNCHES

These Livingston County, Illinois school children are typical of many who benefit from the Community School Lunch Programs throughout the nation. Their hot lunches are made up partially of foods furnished by AMA, partially of locally grown vegetables. The dehydrated soups from AMA consist of 25 percent soy flour or grits. The children pictured gained from 5 to 15 pounds each during the school year.

— Photo Courtesy Illinois Extension News-Messenger

For Corn and for Beans



FURROW OPENER

By J. E. JOHNSON

Farm Manager, Champaign, Ill.

IN THE interest of greater efficiency in soybean production, also the dual use of farm equipment, I present a simple device that has been most satisfactory and profitable to the farm where it was used this year.

This is a standard 11-inch furrow opener attached to the grain drill for seeding soybeans on this farm in 28-inch rows. Only the double disk drill can be used. From our observation of thousands of acres of soybean seedings, we know the loss from the use, or perhaps misuse, of the single disk drill has been very heavy as compared to the seedings of the double disk drills.

From Blacksmith

Most farmers, at least the progressive farmers, are making use of furrow openers for planting corn and an increasing use of hill dropping instead of checking corn. Those farmers have at least two and perhaps four sets of openers on the farm. This device was an addition of two arms and two depth gauges added to the openers used on the corn planter. Any blacksmith can make these additional irons. Perhaps better go to the implement dealer who can give valuable assistance in locating places where this work can be done at a lower cost and in using material of proper size and weight for the purpose needed. Farmers have been negligent in working with the manufacturer of the implements used on their farms. Obviously, their interests are mutual.

There has been complaint about soybeans rowed too close together, likewise those too wide apart. Both may have some advantages and also some disadvantages. We have found that the 28-inch row is to us the optimum width for greatest efficiency. This width of row provides ample width for mechanical cultivation. We use no other. It places the rows near enough so that the ground is well covered and there is no loss in high wind from plants rubbing or blowing and no loss from branches being cut off during the combining. This requires a special plow that is found with almost any standard tractor and the small additional expense is more than offset in the other factors mentioned even to the wider coverage in cultivation as compared with the two-row corn planter or 36-inch row, or even the 35-inch row with the wheat drill as the seeding machinery.

The Object

The object of this equipment is to provide a reasonably deep furrow that insures moisture and results in perfect germination so far as moisture is concerned. The width of the furrow throws the dirt between the rows to be gradually worked back into the furrow during the cultivating process. Cultivation is first done with the smoothing harrow or rotary hoe, keeping in mind that weeds are most effectively killed when in the white stage, not after they have gotten a heavy growth. One plowing and never more than two, will complete the cultivation and if properly done there will be no weeds and the surface will be practically level to prevent the disadvantages formerly experienced with rowing beans where the ridging resulted in losses.

Credit for perfecting this implement goes to Donald Fiedler of Thomasboro, Illinois, the efficient operator of one of my farms. Donald is not only an outstanding farmer and soybean grower, he is also an excellent caretaker. His home presents that air of tidiness and care so much needed for our farm homes. On this farm you will find a place for everything and everything in its place. His tools are greased and put in the shed as soon as they are no longer needed for seeding the season's crops.

— Chicago Daily News Photo

DONALD FIEDLER

A Farmer Member on The Board of Trade?

TWO statements of interest to soybean growers were made by President Philip R. O'Brien in his annual address to the Chicago Board of Trade January 18.

1. He contended growers could realize higher prices under an open market than they now obtain from a controlled market.

PHILIP R. O'BRIEN

2. He suggested farmer membership on the Board of Trade.

Said Mr. O'Brien:

"It is not necessary here to detail all the difficulties of the past year. The membership has suffered. The volume of trading shrank to the lowest since records have been kept. Two main factors were involved — the loss of our soybean futures market, and the shrinking of volume in other grains due principally to the large amount of grain tied up in Government loans.

"In agriculture as a whole there is today more than ever before a growing realization of the indisputable fact that further impairment of the open market facilities will bring serious injury to the farmer. Like our own membership, agriculture is now determined to fight for the preservation of free and open markets in the conviction that unless the trend is halted agriculture will be regimented beyond any hope of future freedom. Farmers have seen one move after another diminish competitive markets, such as in the case of soybeans taken over by Commodity Credit Corporation.

"Here is a recommendation for which I urge your favorable consideration. Our rules might well be altered so that we may invite two or three representative farmers to become members of our Board of Directors, with full privilege of initiating recommendations and full privilege of vote. We want to knit more tightly our mutual interests so that the dirt farmers and the agricultural trades, including the grain trade, may act as a unit and become sufficiently vocal to stop the destructive inroads against agriculture as a whole."

One in Four

Not Properly Inoculated

By DR. A. G. NORMAN

Professor of Soils, Iowa State College, Ames, Iowa

In Farm Science Reporter

ALTHOUGH many farmers make it a rule to inoculate all soybeans, there are still a few who are unconvinced of the value of nodule bacteria in supplementing the supply of nitrogen available to this legume and who do not, therefore, follow the practice of inoculation. Others inoculate their beans when planting on new land but do not re-inoculate if they know that beans have previously been grown on any particular field. They are making the assumption that sufficient bacteria will live over in the soil to bring about proper nodulation. While this is often the case it may not always be so because the nodule bacteria is not particularly vigorous when free-living in the soil. Under such circumstances they have to compete for food with the better adapted organisms that are always in the soil and may slowly die out.

DR. NORMAN

No one has had any very definite information as to the percentage of beans inoculated at the time of planting or what is perhaps more important as to the actual amount of nodulation to be found in the field. Estimates of the latter made by persons in a good position to express an opinion on this subject have ranged all the way from one-third to near to one hundred per cent. In order to obtain a more satisfactory answer to this question a survey was made this season in two Iowa counties, Hardin and Monona. The survey was restricted to the bottomland townships of Monona County because almost all the beans are found there. Both counties had a substantial acreage of beans in 1942, but they differed markedly in past history. In Hardin County the soybean acreage has expanded steadily for the past five years whereas in Monona County it is almost a new crop.

Total Acreage in Soybeans

1937	1938	1939	1940	1941	1942
Hardin County:					
7,509	11,157	17,904	20,589	13,661*	27,896*
Monona County					
343	675	1,128	2,032	3,277*	22,000*

*Estimate made by County AAA officers.

Accordingly nodulation would only be general in Monona County if the seed was inoculated this season. In Hardin County, on the other hand, nodulation could occur either because the seed was inoculated or because sufficient bacteria remained in the soil from a previous crop.

Random Samples

The survey was made by sampling fields at random in the county and digging plants at several places in the field. If nodules were absent or the plants were only poorly nodulated, a more careful examination of the field was made. The results in the two counties were not greatly dissimilar and indicate that the major part of the soybean acreage was in fact well nodulated. Nodulation was reported as poor when nodules could be found only on occasional plants or if nodulation was patchy in the field. In both counties there must have been failure to inoculate, or to inoculate properly between one-fourth and one-fifth of the fields.

	Hardin County	Monona County
Fields sampled	63	75
Beans well-nodulated	50 (79%)	56 (75%)
Beans poorly-nodulated	8 (13%)	7 (9%)
Nodules absent	5 (8%)	12 (16%)

Most of the unnodulated fields were normal in appearance and only in a few cases did the plants appear to be of a lighter color which is ordinarily the symptom of nitrogen deficiency. These unnodulated plants however were not living a legume existence, and were entirely dependent on the available nitrogen supply of the soil. If this is high then the difference in yield and growth between nodulated and unnodulated beans may not be great.

Cost Is Low

If the soil nitrogen supply is low, then the effect of nodulation in increasing the yield and nitrogen content of the plant is likely to be greater. This is the reason why we cannot say clearly that inoculation will always increase the yield by a certain and definite percentage. But we can say that with beans at $1.60 per bushel (or somewhat less if they were frosted), it takes only a very small yield increase to pay for the inoculant and the extra time taken in inoculating the seed. Inoculant was available this past season at about 10 cents for a bushel of seed.

The various commercial inoculants now on the market are almost all satisfactory as a result of regulatory laws in a number of states. (Iowa has a special labelling requirement for inoculants.) Failure to obtain satisfactory nodulation when seed has been inoculated is due usually to lack of care in handling the inoculant or the inoculated seed. Two types of inoculant are available: the "humus" type in which the bacteria are grown first in a liquid and then this liquid is absorbed by mixing with finely ground peat; the "jelly" type in which the bacteria are grown directly on jelly. Many farmers find the former type the more convenient, but drying-out must be avoided. Inoculant should not be part-used, left open on a shelf in the barn, and then used later when dried up. For the same reason, inoculated seed should be planted reasonably soon and not left in the drill or planter out in the field over the weekend or put back for later use.

An Op...

AMERICAN SO... A...
Hu... Iow...

Mr. M. C. Townsend, Director
Food Production Administration
United States Department of Agriculture
Washington, D. C.

Dear Mr. Townsend:

May I, as Secretary of the American Soyb...ation ... a suggestion on the 1943 farm program? A s...y acco... increase further our food production?

Proper inoculation of all soybean seed pla...943 on... crop, under normal conditions, by from 20 to ... bushel... pounds of edible soybean oil, and 400,000 to ...s of s...

This increase in production, achieved at a...n cost ... 10½ million acres included in 1943 goals, is ... to an ... which makes that acreage available for the p... of othe...

Soybeans are not native to America. The ...ixing ... system must be introduced from outside sour...out tha... produce its own nitrogen supplies. Properly ... soybea... more, and the protein content of the forage a... crop ... as one-half.

Inoculation is especially important in new ...produci... before grown the crop. Greater benefits are ... the les... have found that proper inoculation of all be...en thos... pays big dividends.

Would it not be the part of wisdom for ...AA adm... inoculants on all soybeans planted as seed in ...AA acr... every possible pound of edible oils and prote...e same... soil nitrogen, rather than depleting them at a t...itroge...

Either commercial inoculants or well-inocu...an be u... the introduction of sufficient live, virile bacteri...rect str...

If bonus payments for liming and for u...sphate ... is not a proposal such as this even more logic... of foo... proper inoculation be advisable? Or perhaps ...g of p... complete compliance on AAA acreage of soy...ill appr...

...truly yo...

GEO...
...RICAN ...

GMS:j

Op Letter

SOY N ASSOCIATION
Hud Iowa

January 22, 1943.

n Soyb ation and Editor of THE SOYBEAN DIGEST, make
A si y accomplished, yet effective measure designed to

ed pla 43 on AAA acreage would increase the total
20 to bushels. This is equivalent to 160 to 320 million
00 to s of soybean meal.

d at n cost of from 10 to 15 cents per acre on the
ls, is to an acreage increase of 2 to 4 million acres,
the p of other crops.

. The ixing bacteria which inhabit the soybean root
e soun out that bacteria, the soybean has no power to
perly soybeans sometimes yield as much as one-half
rage a crop may, likewise, be increased by as much

in new producing areas and on soils which have never
s are the less fertile soils. Most experienced growers
all be en though going on a field in successive years,

n for A administrator, to require the use of proper
ed in A acreage? Thus insuring the production of
prote e same time building up the reserve supplies of
at a nitrogen fertilizer supplies are being rationed?

ll-inocu an be used satisfactorily. The essential thing is
bacteri rect strain and species.

for us sphate fertilizers have been sound in past years,
e logic of food shortage? Would not a bonus for
erhaps g of proof of proper inoculation in order to
of soy ill appreciate your views on this proposal.

truly yours,

GEO. M. STRAYER, Secretary
RICAN SOYBEAN ASSOCIATION.

"We Agree—"

Some Comments in Our Mail

FOLLOWING the letter, published below, of Editor Strayer to M. C. Townsend, director of the Food Production Administration, suggesting that proper inoculation of every bushel of soybean seed be made one of the 1943 AAA requirements for compliance on soybean acreage, *The Digest* has received many letters, most of them favorable, concerning the proposal.

Most leading growers now inoculate every year as a matter of course, and agree that such a simple provision would be more than justified by results.

Some few letters were received, however, which expressed skepticism regarding the value of inoculation on ground where soybeans have been grown over a period of time.

Following are representative comments:

Illinois

J. E. Johnson, Farm Manager, Champaign: On the thousands of acres grown annually on managed farms, we look upon proper inoculation as an added insurance, one that costs so little and has such possibilities that we pay for the culture on all farms.

Don Burke Denby, AAA Chairman, Macoupin County: After ground has become inoculated, further inoculation of the beans would hardly be necessary. I did not inoculate my beans this year, but they were grown on land where inoculated beans had been grown since approximately 1930. In sections which have not inoculated beans, inoculation is the key to increased production.

Indiana

H. S. Benson, County Agricultural Agent, Vincennes: We have contended in this county for years that the AAA people should pay in performance of lime, fertilizer, drainage, soil erosion practices, grass seedings included instead of corn and wheat. Inoculation could be added to them. We will go all out in the program that you suggest.

Ohio

Ohio Experiment Station: Some farmers plan to put soybeans back on land that grew soybeans in 1942, because it has frequently been noted that the second soybean crop may be better than the first one, largely because the first crop was only partly inoculated. If the first crop is well inoculated, the second crop of soybeans immediately following is not likely to be any better than the first one.

Modern cultures are "bred up" to a high degree of efficiency in their ability to convert atmospheric nitrogen into plant-food nitrogen in the nodules on the legume roots. Inoculating all soybean seed, regardless of the previous crop, is cheap insurance against inoculation failures. Uninoculated soybeans lack vigor and are delayed in ripening; the yield is reduced, and the soil is depleted of its nitrogen supply. *Too many soybean fields all over Ohio showed evidence of poor inoculation in 1942.*

Elmer F. Kruse, Chairman, Ohio U.S.D.A. War Board: The Ohio U.S.D.A. War Board will make every effort to assist you in the program you have launched.

G. G. McIlroy, Farm Management Inc., Irwin: In connection with the government's plea for increased production, I cannot understand why there has not been incorporated in the soil conservation regulations a provision which would require the use of a good inoculation on soybean seed. There is no question but that if all beans sown next spring could be properly inoculated the total production for the country could be materially increased.

Minnesota

Hubert Ranson, Secretary Watonwan County AAA: It has been the policy of the county committee to suggest in all instances that the beans either for seed or hay be inoculated as personal experience has proven the worth of inoculation in both cases. We assure you that we are in agreement with your suggestion that all beans should be inoculated and a small payment paid through the soil building allowances.

A. C. Arny, Associate Agronomist, University of Minnesota: In Minnesota inoculation without exception is recommended.

Iowa

Howard L. Roach, Plainfield: Our practice is to follow soybeans with oats and seeding (usually red clover or alfalfa) and in bean fields where part of the beans were inoculated and part were not we have definitely noticed a darker, thriftier oat plant on the portion of the field where the beans were inoculated.

HOWARD ROACH

Our practice is to inoculate each year with a culture of known strength. Inoculation of soybeans with loam from fields where beans were grown the previous year has proven effective in about 75 percent of the cases tried, however, a failure on the part of 25 percent makes me frown on that practice.

A short-cut method of inoculation is to use a scant teaspoonful of inoculation in the top of each planter box each time the box is filled and mixing the inoculation through the beans. We have not found it necessary to dampen the beans for good results. Gauge the amount of inoculation to the capacity of the planter box so that approximately the amount of inoculation is used to a given quantity of beans called for by the manufacturer's recommendations.

Wayne A. Robinson, Marshalltown: I believe it pays to inoculate beans every year. The laboratories manufacturing inoculation are constantly on the search for new strains of cultures that have the ability to gather more nitrogen. For the small cost per acre I feel that it is a very good investment to keep my fields of beans exposed to the very *latest models* of inoculation.

(Continued on page 14)

SOME RECIPES

WITH spring still more than a month away, there is time these long winter evenings for experimenting with new recipes and trying out those new ideas that make eating a pleasure. The recipes below are distinctly worth a trial. They come from the Foods and Nutrition Department of Iowa State College.

— USDA Photo by Forsythe

Miss Mary Dooley, scientific aide in the home economics laboratories at the USDA Beltsville Research Center, takes from the oven a meat loaf in which soybean flour was used.

Puree of Soybean Soup

1 cup soybean pulp
1 tbsp finely chopped celery leaves
2 tbsp chopped onions
¾ cup meat stock
1 tbsp flour
2½ cups milk
1 tbsp butter
1 tsp salt
⅛ tsp pepper

Cook the soybean pulp, which has been put through a coarse sieve, with the celery, onion and meat stock. Add to a sauce which has been made of the other ingredients. Serve hot with crackers or toast. Serves 6 persons.

Soybean Pudding

2 cups boiled soybeans, riced
¾ cup brown sugar
4 eggs, separated
3 tbsp lemon juice
Grated rind 1 lemon
1 tbsp flour
⅛ tsp nutmeg
½ cup maraschino cherries
Milk enough to reduce soybeans to a thick cream.

Beat egg yolks until lemon color and fluffy. Gradually add sugar, lemon juice, lemon rind, nutmeg and soybeans. Sprinkle maraschino pieces with the flour and fold into mixture. Add the salt, the whites and beat until stiff. Then fold into mixture. Pour into buttered baking dish and bake in a moderate oven. (350 degrees.)

Chili Con Carne with Soybeans

2 cups cooked soybeans
½ pound salt pork, diced
⅛ cup chopped onions
½ pound beef, ground
2 cups tomatoes
1 tbsp chili powder

Fry salt pork until crisp. Remove the pork and brown the onions. Add the ground beef. Cook slowly for 8 minutes. Add the chopped pork and the remaining ingredients and heat to boiling.

Soybean Muffins

½ cup soybean flour
1½ cup white flour
4 tsp baking powder
3 tbsp sugar
½ tsp salt
1 egg
4 tbsp melted fat
1 cup milk

Sift together all dry ingredients. Combine the beaten egg, fat and milk and stir these quickly into the dry mixture. Bake in greased muffin pans for 8 to 10 minutes in a hot oven (450 degrees F.). Yields 12 to 15 muffins.

Soybean Croquettes

2 cups soybean pulp
1 cup rice cooked
5 tbsp chopped onions
1 tbsp shortening
1 egg
½ cup bread crumbs
1 tsp salt
⅛ tsp pepper
¼ tsp kitchen bouquet
⅛ tsp paprika

Brown onion in shortening. Put one cup cooked soybeans through food chopper. Add cooked rice and seasonings. Mold croquettes, dip in slightly beaten egg, then in yellow cornmeal. Bake in a very hot oven in shallow pans for about 30 minutes, until brown. Serve with tomato sauce.

Soybean Piecrust

1½ cup sifted white flour
1 cup sifted soybean flour
6 tbsp lard
1 tsp salt
About 2½ tbsp cold water

Mix the flour and salt and work in the fat with finger tips or pastry blender. When the flour and fat are grainy add the cold water slowly, using no more than necessary to make a stiff dough. Proceed as usual for pie crust.

Baked Bean and Bacon Salad

2 cups baked soybeans
7 slices crisp bacon, diced
⅛ cup diced cooked beets
3 stalks chopped celery
3 tbsp minced sweet pickles
1 tbsp ketchup

Cook salad dressing to moisten. Mix the above ingredients and serve on crisp salad greens.

RECIPE LEAFLETS

Those who are interested in obtaining more of the soybean recipes offered by Iowa State College should address the Extension Service, Iowa State College, Ames, Iowa, for leaflet R-1765, "Soybeans for the Table," by Faiba Whitney.

An even more extensive leaflet is offered by the Extension Service of the University of Illinois College of Agriculture, Urbana, Ill. It is called "Ways of Using Soybeans as Food," and may be obtained by writing for it.

THE SOYBEAN DIGEST hopes to publish some of the Illinois recipes on this page in the near future.

GLIDDEN BUYS INDIANA MILL

The Glidden Company has purchased the building in Indianapolis, Ind., formerly owned by the American Hominy Mills and will establish one of the largest soybean processing mills in America, according to announcement. The plant will be the feed mill division of the Glidden Company which operates 34 mills and mines in 14 states. At the Indianapolis plant, soybean oil for vegetable shortening and other uses will be extracted. It is expected the capacity of the mill will be stepped up to 30 cars of stock feed daily. Adrian D. Joyce is president of the company and Peter Turner, general manager.

Soybean Yield

Contest Winners

R. G. Stoakes of Traer is the winner of the second annual Iowa five acre soybean yield contest, with a yield of 37.77 bushels per acre. This yield tops that of the 1941 first place winner, Frank Aliger of Paton, with 33.83 bushels. To Mr. Stoakes goes the John Sand trophy, awarded for the first time this year.

Strayer Seed Farms, Hudson, were second with a yield of 33.60, and Harry Friedley, also of Hudson, third with a yield of 33.04 bushels. All three first place winners entered Richlands, grading No. 1 and 2.

Winner of fourth place, Joy Canby, Mt. Union, secured the highest yield of any entrant, 39.89 with a field of Illinis, but was penalized because his entry graded No. 3. Fifth place winner was Craig Stoops, Stockport, with Illinis yielding 36.41, also grading No. 3.

Illinois Winners

Following are the results of the 1942 Illinois Ten Acre Soybean Growing Contest:

First Place — Fred E. Phillips, Arthur, Moultrie County, Illinois.

Yield—52.91 bu. per acre **Cost—$258.71**
Oil Content—21.93% **Quality—79%**

Total Score — 85.86%

Second Place — C. F. Davis, Sullivan, Moultrie County, Illinois.

Yield—46.57 bu. per acre **Cost—$239.48**
Oil Content—20.95% **Quality—100%**

Total Score — 84.53%

M. E. CUSTER

R. G. STOAKES

Third Place — Frazier and Frazier, Charleston, Coles County, Illinois.

Yield—48.59 bu. per acre **Cost—$245.64**
Oil Content 22.00% **Quality—75%**

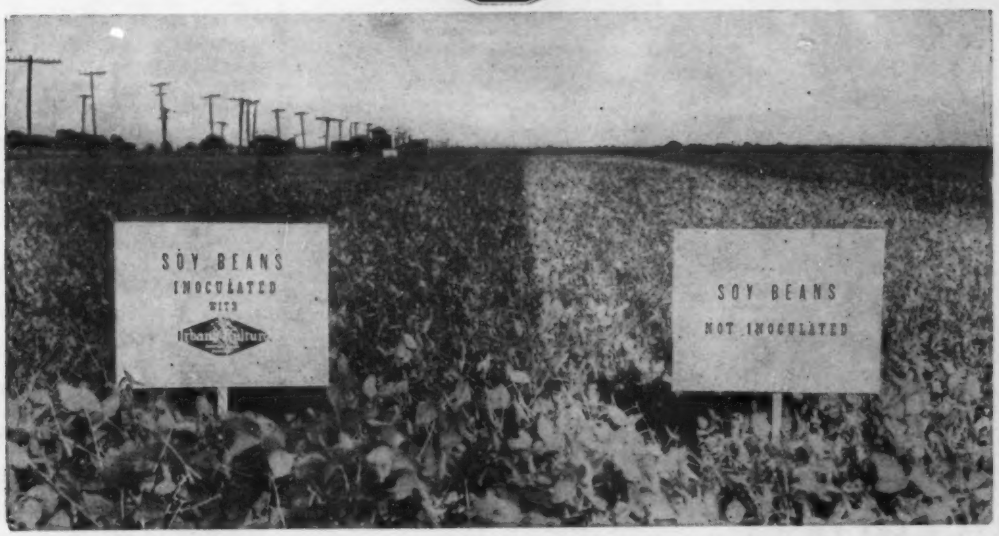
Total Score — 82.83%

The average yield of all contestants for 1942 is 40.03 bushels per acre, which is an increase of 4½ bushels per acre over the average yield of the 1941 contestants' plots. The average yield last year was 35.53 bushels per acre, and the highest yield was 50.73 bushels per acre.

Mr. Phillips, winner of the 1942 Contest, had a field of 14.1 acres planted with Certified Chief Soybeans. The total net weight of the beans taken from the field was 42,520 pounds. They were planted in rows 28 inches apart with about 1¼ inches between plants. He used 15 bushels of seed on the 14.1 acres; seeded it May 28th — approximately a bushel per acre. This field was planted to corn in 1941, was planted to soybeans in 1940, and sweet clover three years ago, 1939.

Above (left) is shown M. E. Custer, Grant County, Ind., winner of the Indiana soybean yield contest and the Roy Caldwell Trophy, with a record yield of 47.9 bushels per acre.

INOCULATE YOUR Soy Beans with Urbana Culture Superior Legume Inoculator SOY BEANS for VICTORY



It Is Just Good Business to Inoculate and Use the Free Nitrogen of the Air

Prepared only by **THE URBANA LABORATORIES** Urbana, Illinois

★ FEEDING ★

MEALS FOR POULTRY

One of the most critical problems in the poultry industry is the shortage of animal protein sources, say H. J. Almquist and V. S. Asmundson, Division of Poultry Husbandry, University of California. This shortage has arisen from unavoidable interference with manufacture and transportation of such products as a result of the war effort, and a greater demand due to efforts to increase egg and poultry production.

The oil-cake meals are the principal protein carriers which can replace at least a portion of the fish meals that have been customarily used in poultry feeds in the western states. Since the chicken and the turkey must have a high grade of protein for maximum performance, not all of these oil-cake meals have proved suitable for poultry feeding. It is generally agreed that among these the soybean meal made by modern and carefully controlled methods is superior.

Soybean meal is not produced on the Pacific Slope but must be imported from the Central States. It is necessary, therefore, to anticipate conditions under which shipment of soybean meal to California and other Pacific Coast states might be curtailed and to study the usefulness of locally produced feedstuffs that may serve as emergency alternative sources of protein. With the objectives of determining the most effective methods of using soybean meal and other oil-cake meals, experimental work has been under way for some time in the Division of Poultry Husbandry.

Experiments With Chickens

When employed in broiler rearing rations at a 10 per cent level, soybean meal, corn gluten meal, cottonseed meal and sunflower seed meal have given excellent results. In another trial cottonseed meal and soybean meal were fed at 25 per cent levels of the broiler ration, and in combination at 12.5 per cent each. These rations contained only 3 per cent sardine meal. Results were very satisfactory.

Tests were also conducted to determine if sardine meal could be dispensed with entirely. A broiler ration containing 10 per cent sardine meal and 10 per cent soybean meal was compared with one containing no animal protein concentrate but 30 per cent soybean meal. In terms of total gains and gains per unit of feed consumed, the high soybean meal ration was about 93 per cent as efficient as the other rations. All birds were in good condition.

It is possible, therefore, to achieve moderately good results with no animal protein concentrate in the ration.

In a series of experiments with "synthetic" diets containing exclusively soybean protein at a level of 20 per cent, the only inadequacy found was a partial deficiency of the amino acid, methionine. When this amino acid was increased by addition of the pure substance, the growth rate of the chicks was raised to normal.

The 1942 generation of the experimental Single Comb White Leghorn stock at Berkeley was reared on two mashes, one corresponding to a formerly used rearing mash and another containing 10.5 per cent of soybean meal, but less sardine meal. Both mashes had the same protein, calcium, phosphorus and vitamin content as far as could be estimated. Over 1300 chicks were reared on each mash to an age of 6 weeks at which time the average weights were practically identical. Male birds were removed and the pullets reared to maturity. At 20 weeks the average weights of the pullets were not significantly different, although pullets reared on soybean mash were slightly heavier. Mortality was low and equivalent in both groups. Over 600 pullets were reared on each mash. This experiment furnishes conclusive evidence that at least 10 per cent soybean meal can be used effectively in the rearing mash.

An all-mash battery laying ration containing 20 per cent soybean meal and 6 per cent whey, but no sardine meal, was tested on a small scale primarily for the study of effects of egg quality. Production was maintained by hens on this diet at a good rate. The eggs produced were entirely normal in respect to exterior and interior quality when examined either soon after they were laid or after a month of storage in an icebox. No deleterious effects on egg quality may be expected, therefore, from the use of soybean meal in the laying ration. All of the above mentioned work was conducted with solvent process soybean meal.

Experiments With Turkeys

Tests of oil-cake meals in the turkey rearing ration have been conducted at Davis. Mashes for starting poults were formulated to contain 26 per cent crude protein. This level was achieved by the use of varying combinations of sardine meal, cottonseed meal, soybean meal, linseed meal, and corn gluten meal. After 6 weeks a regulated feeding of grains was started and increased by a definite schedule as the birds matured. Soybean meal (solvent process) gave quite satisfactory growth at all levels from 5 to 30 per cent of the mash.

The experiments reviewed above show that comparatively high levels of certain oil-cake meals can be used satisfactorily in chicken and turkey mashes. The highest levels used are perhaps greater than need ever be employed in commercial poultry feeding, but these levels serve to indicate possibilities that may be of value in extreme shortage of other protein carriers.

Of all the oil-cake meals studied, soybean meal made by modern and controlled processes appears the most suitable from all standpoints.

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STORAGE BINS
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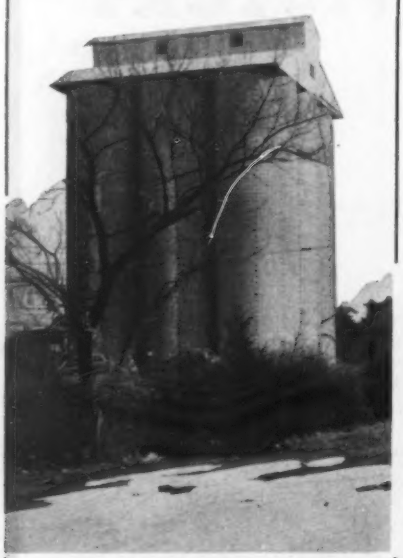
For the duration, the entire capacity of Neff & Fry is devoted to the erection of bins for war plants, essential elevators, etc. If you can furnish the priority required, we invite you to consider Neff & Fry bins for the saving of time, labor, and space.

Stave or monolithic concrete construction. Wide range of capacities and arrangements. Special conveyor equipment. Thousands of bins in service, many for the storage of soybeans, wheat, and other grains. New 1943 catalog just off the press.



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CAMDEN, OHIO
Neff & Fry Storage Bins

Seed Directory

A charge of $1 has been made for listing in the February, March and April issues. Listings for the March and April issues can be made for 75c. Quantity for sale and variety are included.

OHIO

Hillsboro — A. R. Kinzer, 100 bushels Illini, 100 bushels Chief, 100 bushels certified Dunfield.

Ada — J. R. Spar, 300 bushels registered Dunfields, also Ohio Certified Hybrid Corn.

IOWA

Boone — Roscoe Marsden, Rt. No. 1, 700 bushels certified Richland, germination 90 percent.

Hudson — Strayer Seed Farms, 500 bushels Richland, 500 bushels certified Richland, 1,000 bushels Mukden, 200 bushels Kingwa, 250 bushels edible Bansei.

INDIANA

Knightstown — R. Cannell, Mgr. Hackleman Farms, 300 bushels certified Chief, 150 bushels Richland, 200 bushels Illini.

ILLINOIS

Champaign — Seeber Bros., Graded and certified Chief, 85% germination, 99.8% purity in bags ready for planting.

NEW YORK

WANTED — 200 bushels soybeans: Aoda, Giant Green, Bansei, assorted or one variety. Nutrisoy Company, 21 East 40th St., New York, N. Y.

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BAG PATCHING and MENDING MACHINES

Will handle cotton and burlap bags.

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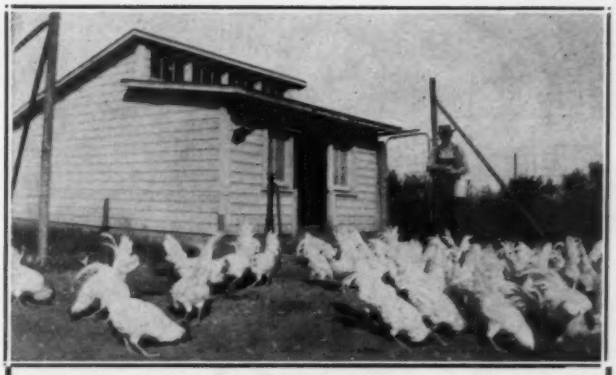
Official Chemists for National Soybean Processors Association



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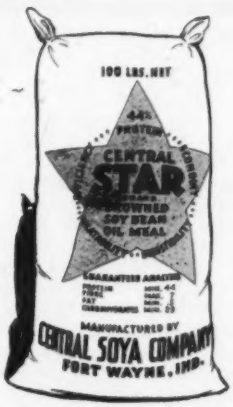

CENTRAL STAR BRAND 44% SOYBEAN OIL MEAL

MORE . . . . More soybeans — more eggs, more milk, more meat! Soybean oil meal, and soybean oil are now a matter of defense production and we must work accordingly. A big job ahead for the grower and feeder, for the elevator, processor, feed manufacturer — a vital job that must be done well.

Soybeans hold a double value for the grower-feeder — a good cash crop, and a major source of protein for feeds.

Growers and feeders in the areas served by our plants will find us prepared — to handle their increased acreage of beans, and to furnish them with properly balanced feeds for increasing growth and production in livestock and poultry.

CENTRAL BRAND 41% SOYBEAN OIL MEAL

MASTER MIX

A Basic Source of Vegetable Protein in Master Mix Feeds and Concentrates

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MILLS: DECATUR, IND., and GIBSON CITY, ILL. **GENERAL OFFICES, FORT WAYNE, IND.**

NEW BEAN GOALS SET

The U. S. Department of Agriculture has announced an extensive war production program of incentive payments totalling approximately $100,000,000, designed to obtain greater production of food and fiber crops vital to the war effort.

An additional million and one-half acres of soybeans is being requested. This increases the production goal from 10½ million to 12 million acres. Under the new program, payment of $15 per acre will be made to farmers on each acre over 90 percent of the farm goal to 110 percent of the goal.

Says Secretary of Agriculture Claude Wickard, concerning the new goals: "Individual farm goals for soybeans will have to be set carefully to avoid severe damage to rolling land. In the Corn Belt States, where a large part of the soybean increase will take place, this crop probably will replace some of the oats not used as a nurse crop for clovers. On level land such a shift can be made without permanent damage to the land. In all cases, of course, the increases should be fitted to the land."

—s b d—

A good crop of soybeans will grow on good land without proper inoculation —but it grows at an extra cost of at least $10 per acre in nitrogen **taken from the land.**

Neither prior crops nor the presence of nodules guarantee the proper inoculation necessary to take this nitrogen "Free From the Air."

Always Use

KALO

INOCULATION

"THE PEER OF THE BEST"

Guarantee proper inoculation at a cost of only pennies per acre

TOP RANKING QUALITY AT NEW LOW PRICES

2 bushel size	**$ .30**
5 bushel size	**.45**
25 bushel size	**1.95**
30 bu. size (6-5 bu. cans)	**2.60**

KALO INOCULANT COMPANY

QUINCY, ILLINOIS

"WE AGREE — "

(Continued from page 9)

Arkansas

Jacob Hartz, Stuttgart: After having grown soybeans for 19 years, I find for the best results and highest profit soil inoculation should be practiced. Young soybean plants need available nitrogen as soon as possible and if the proper legume bacteria is not present, the plant must depend entirely on the nitrogen in the soil. We have found that few soils contain enough combined nitrogen to nourish legumes adequately.

Wisconsin

Geo. M. Briggs, Extension Specialist, Madison: On our lighter soils especially we have had excellent results from inoculation. One of the early experiments indicated an increase in total yields from 80 to 100 percent on some of these very poor soils.

Michigan

C. P. Milham, County Agricultural Agent, Ithaca: I believe you have struck a very important point. In this county, which is one of the largest soybean producing areas in Michigan, I have been pointing out this fact to farmers for some time.

Many farmers report that they are unable to secure satisfactory crops following soybeans and upon checking up the matter, I find that in almost every instance where this condition is reported, the fault is due to the fact that inoculation was not used on the soybeans and the crop of beans had removed rather than added nitrogen to the soil.

H. J. Lurkins, County Agricultural Agent, St. Joseph: I agree with you about inoculating every bushel of soybeans not only in war time but peace time. We are asked not to increase our soybean acreage but nothing is said against increasing the quantity and quality per unit.

—s b d—

THE FARMER'S VIEWPOINT

(Continued from page 6)

I cannot let this opportunity pass without taking another swat at the weed problem. And of course when weed control is mentioned a number of other questions pop up for consideration. It should be borne in mind that weed troubles are very often the result of poor stands of beans, so that those practices which are designed to promote a full population of soybean plants are likewise the best possible measures for taking care of the weed problem. Weeds, like some people, can make a big noise so long as the competition is negligible, but fold up when there is a tough fight for existence on hand. Give a good stand of soybeans a head start in the spring and the weeds are pretty well whipped for the season.

To further the chances for a good stand of soybeans, I have always cautioned against too early planting in the spring. The last half of May has always been my choice time to plant. However, the corn borer menace may definitely break into this schedule. One of the most effective methods of combatting the borer is the late planting of the corn crop, which would mean the last two weeks in May. Farmers have generally practiced the plan of planting the corn crop before starting in on the soybeans. It is quite possible that this process will have to be reversed, since it is quite obvious that both crops cannot be planted during the last half of May.

Soybeans planted the first half of May are subject to more cold, wet weather, and a colder soil. Being by nature a warm weather plant, the possibility of a slow uneven start is enhanced. Also if the seed happens to be weak, the chances for good germination is lessened; all of which makes a setting for a real fight with the weeds. With little opportunity to kill the weeds, previous to planting, both weeds and beans have a comparatively even start with the odds in favor of the weeds.

Under such conditions, row planting of the soybeans is strongly recommended. For thirty-one long years I have preached this method of planting soybeans and still there are many misguided souls outside the fold. But if it becomes necessary to thus change our planting practices, to gear in with the corn borer fight, then the advantages of row planting of soybeans should be doubly impressive.

Soybeans and Wheat

Another problem that has not yet been satisfactorily solved on many midwestern farms is the one of producing a soybean crop in time to follow it with wheat sowing. A full season variety of soybeans often leaves too little seasonable weather for the wheat crop to get a favorable start. Some interesting data is now being worked out on the Purdue farm, which we visited today, in regard to the feasibility of planting earlier varieties, thus sacrificing somewhat on yield, but giving the wheat a chance to more than make up the difference.

Another idea came to me recently. This idea came from our friend Keller Beeson and I mention it to you. And that is to plant tall, stiff stemmed varieties in rows wide enough to allow the wheat drill to pass through and sow the wheat before harvesting the beans. But whatever the plan, I have learned from experience that frost, freezing weather and cold, fall rains do not mix well with soybean harvesting.

Farmers will, I believe, keep up the pace set this year in growing soybeans for another season, particularly if the government needs continue to be as great. The problem of adjusting the rotation, while disrupting, will be made some way or other. It is not likely that any great amount of corn acreage will be pulled out for soybeans, but the other grain crops will probably give way to this demand. The growing seriousness of the shortage of help on the farm will doubtless be the greatest handicap to overcome in this program of increasing the acreages of two cultivated crops that compete for what little extra labor the farmer will be able to muster.

But let us keep in mind as farmers that through sheer necessity, the impossible is being done today in industry, on the battlefields of North Africa and the Solomons, and in the stratosphere of central Europe. Our farmers of America, in spite of bickerings over price ceilings, labor shortages, and possible inequalities, will in the same stride continue to keep their end of the doubletree on an even keel in this great emergency.

MARKET SUMMARY

SOYBEANS

	Feb. 8	Jan. 27	Jan. 6
May	1.82⅛	1.84¾	1.83

SOYBEAN OIL

	Feb. 8	Jan. 25	Jan. 2
Tanks, Midwest Mills	11¾c	11¾c	11¾c B

Action in the soybean futures market has been practically nil, with country movement very light. Though processors have been again in the market to replenish dwindling reserve stocks, farmers are reported holding for higher prices, and movement from farmers' hands is meagre.

There continues to be an urgent demand for soybean meal but no new business is being transacted due to the scarcity of supplies. Trading in soybean oil has been mostly from hand to mouth, the mills being reluctant to offer, with all buyers willing to pay the ceiling.

STANDARD SHORTENING SHIPMENTS

By Members of Institute of Shortening Mfgs., Inc.

Week ending January 9, lbs.	9,240,578
Week ending January 16	10,437,934
Week ending January 23	9,108,734
Week ending January 30	9,536,228

TRADE NEWS

CRUSHERS SEEK MORE BEANS

The Department of Agriculture reports that the early-season congestion in the marketing and crushing of soybeans has been relieved. Crushers are again in the market for beans for processing into vegetable oils, meal and cake during the remainder of the current season. Farmers should have no difficulty in finding a ready market for their soybeans. In some areas, additional deliveries of soybeans are needed in order to assure continuous operation of the crushing plants. Current crop reports indicate that about 99 million bushels of soybeans were on farms this January 1, or about 47 percent of the 1942 crop. About 60 million bushels of the 1942 crop had reached processors by January 1, and about 56 million bushels were between farms and processors. The Crop Reporting Board estimates that of the remaining stocks on farms about 72 million bushels will be marketed during the remainder of the season.

Twenty per cent of the Illinois crop, or about 15 million bushels, is estimated to be still in the fields. It is doubtful, Illinois economists say, whether the total Illinois harvest will provide much more than enough soybeans for capacity operation of mills in the state and for seed supplies.

—s b d—

SOYBEANS IN LEND-LEASE 1942

Purchased by Agricultural Marketing Administration for lend-lease.

Commodity	Quantity (Pounds) 1942	Quantity (Pounds) Cumulative	F.O.B. Cost 1942	F.O.B. Cost Cumulative
Oleomargarine	96,000,337	97,129,337	$14,674,315	$14,828,828
Salad Oils	171,455,898	171,455,898	21,851,648	21,851,648
Shortening	45,609,865	45,609,865	7,472,405	7,472,405
Soya & Soya Products				
Soya Beans	24,000,000	50,980,000	$ 800,400	$ 1,630,879
Soya Flour	9,305,000	29,535,000	750,580	1,913,760
Soya Grits	60,290,000	60,290,000	2,571,910	2,571,910
Soya Sauce (cases)	312	312	1,702	1,702
			$ 4,124,592	$ 6,118,251

—s b d—

SOYBEAN INSPECTIONS

Receipts of soybeans inspected in December continued to drop off and totaled 6,927 cars compared with 7,951 cars in November. The December inspections brought the total for the first three months of the season to 31,912 cars compared with 26,245 cars for the same months in 1941.

The quality of the soybeans inspected in December was somewhat lower than that of the November inspections. Only 24 percent graded No. 2 or better compared with 29 percent in these grades in November. Twenty-three percent of the soybeans inspected in December graded No. 3, 13 percent No. 4, and 40 percent Sample grade.

Soybean inspections for the January 1-15 period totaled 1,903 cars as follows: Illinois 684; Indiana 362; Iowa 202; Missouri 274; Ohio 381.

AT THE START of the processing of soyas, the Prater Dual Screen Grinder is almost universally specified for grinding of the beans. FROM THE START of the soy bean industry, Prater Grinding Service has constantly added to its store of engineering knowledge that brought this position of leadership.

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MIXED FEEDS UNDER CONTROL

Effective Jan. 22, OPA for the first time brought under price control mixed feeds used for poultry and livestock. The ceilings apply at producer, wholesale and retail levels.

The ceilings apply as follows:

For producers — Maximums for each manufacturer and private brand dealer will be his present cost plus an average of his mark-ups over cost on his sales made during January, March, May, October, November, and December 1942. However, after these margins have been reported to OPA, this regulation may be succeeded by fixed dollars and cents mark-ups for each class of manufacturer and private brand dealer.

For wholesalers — A fixed mark-up of $2.50 a ton over list price will be allowed as their ceiling.

For retailers — A fixed mark-up of $7.50 a ton over list price is permitted as their peak price.

—s b d—

BAN OIL IN INEDIBLE USES

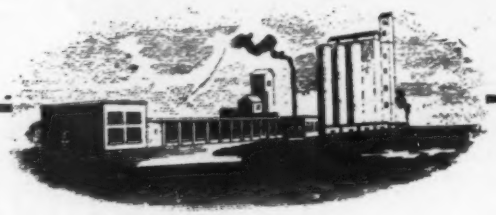
WPB has banned the use of a number of fats and oils including soybean oil in a number of inedible products. The list: butter, lard, rendered pork fat, oleo oil, oleo stearin, oleo stock, edible tallow, edible olive, peanut, sunflower, sesame, raisin seed, tomato seed, cottonseed, corn, **soybean,** seal oil, and whale oil, excluding sperm.

The items forbidden the use of the above oils include: soap, paints, varnishes, and all other protective coatings, linoleum, oilcloth, and printing inks. The order does not forbid the use of the fats and oils in manufacture, preparation, or finishing "implements of war," nor in certain minor instances. A provision of the amended order makes it clear that blenders are not considered manufacturers.

—s b d—

IMPORTS FROM MEXICO

Because of the larger demands throughout the country for livestock, dairy, and poultry feeds during the winter months, WPB will permit the importation from Mexico of as much cottonseed, sesame, and similar types of cake and meal as is possible. Such imports, it is explained, would help satisfy seasonal requirements for feed cake and meals. Shipments from Mexico will be made overland by rail. Special authorization for the importation of the feeds in question can be granted only if the burden thereby placed on rail transportation facilities does not become too heavy.



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Those who state that Soybean Meal is being hoarded are only ill-advised.

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If You Are a Soybean Grower

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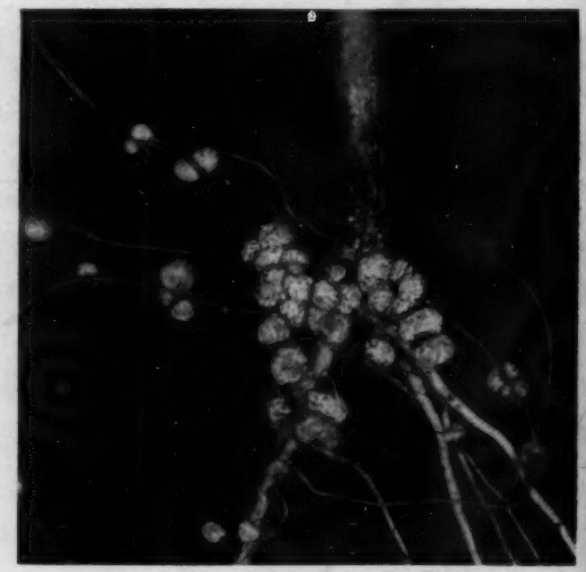
Make Every Soybean Field a NITROGEN FACTORY

← The rapid increase in the acreage of soybeans is shown in this chart, based on USDA reports. The sale of NITRAGIN inoculation has increased correspondingly.

✦

These root nodules serve as "Nitrogen factories" on soybeans and other legume plants. The photograph below shows a soybean root with nodules produced by effective strains of NITRAGIN inoculation. ↓



With our customary sources of many vegetable oils cut off by the enemy, soybeans loom as one of our most critical crops. At the same time another critical shortage is arising in nitrogen fertilizers. Much of the nitrates formerly used in commercial fertilizers are now needed for explosives. But our soybean crop is capable, if properly inoculated, of storing as much nitrogen in the soil as would be supplied in any ordinary application of fertilizer. While much of this may be removed when the crop is harvested, it still is better to grow a legume which derives so much of its nitrogen supply from the air instead of taking it from the soil as non-leguminous crops do.

The importance of inoculating with specific soybean strains of nitrogen-fixing bacteria has been emphasized by agricultural authorities again and again. Since the results cannot be determined in advance the soybean grower must buy his inoculant on faith. That soybean growers have this faith in NITRAGIN is evidenced by its unquestioned sales leadership, its long service to farmers (over 43 years), and its unequaled laboratory facilities for the production of dependable, high-quality legume inoculants.

THE NITRAGIN COMPANY

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